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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,157	10/17/2003	Manish Mangal	2340	9209
28005	7590	07/13/2005	EXAMINER	
SPRINT 6391 SPRINT PARKWAY KSOPHT0101-Z2100 OVERLAND PARK, KS 66251-2100			ADDY, ANTHONY S	
			ART UNIT	PAPER NUMBER
			2681	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/688,157	MANGAL ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Anthony S. Addy	2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 17 October 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-24 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-24 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 17 October 2003 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 6, 8-10,14, 16-20 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by **Spinar et al., U.S. Publication Number 2002/0080816 A1 (hereinafter Spinar).**

Regarding claim 1, Spinar teaches a wireless communication system adapted to provide communication services to multiple mobile stations operating within a given coverage area (see paragraph 0043, lines 1-16, paragraph 0008, lines 1-11 and Fig. 1; where CPE's 110 are shown in a cell site and it is inherent the CPE's, users and subscribers as disclosed by Spinar are mobile stations in the wireless network as shown), wherein the system dynamically allocates radio frequency bandwidth among the mobile stations according to a bandwidth allocation algorithm (see paragraph 0096, lines 1-13 and paragraph 0161, lines 1-13), and wherein the radio frequency bandwidth is used to send voice or data traffic to the mobile stations as part of providing the communication services to the mobile stations (see paragraph 0042, lines 8-16), a method comprising: determining that a threshold number of mobile stations being provided communication services are concurrently operating in the given coverage area (see paragraph 0018, line 1 through paragraph 0019, line 25, paragraph 0156, lines 1-

20 and paragraph 0164, line 1 through paragraph 0167, line 12); and responsively changing the bandwidth allocation algorithm, so as to change how the system dynamically allocates the radio frequency bandwidth among mobile stations (see paragraph 0161, lines 1-13).

Regarding claim 9, Spinar teaches a CDMA network adapted to provide communication services concurrently to multiple mobile stations operating within a given coverage area (see paragraph 0043, lines 1-16, paragraph 0008, lines 1-11, paragraph 0117, lines 28-36 and Fig. 1; where CPE's 110 are shown in a cell site and it is inherent the CPE's, users and subscribers as disclosed by Spinar are mobile stations in the wireless network as shown), a method comprising: determining that a threshold number of mobile stations being provided communication services are concurrently operating in the given coverage area (see paragraph 0018, line 1 through paragraph 0019, line 25, paragraph 0156, lines 1-20 and paragraph 0164, line 1 through paragraph 0167, line 12) ; and responsively changing a bandwidth allocation algorithm, wherein the bandwidth allocation algorithm is used to allocate a forward supplemental channel among the mobile stations (see paragraph 0161, lines 1-13 and paragraph 0119, line 1 through paragraph 0122, line 24), and wherein the forward supplemental channel is used to send voice or data traffic from a base station to the mobile stations as part of providing the communication services (see paragraph 0042, line 8 through paragraph 0043, line 13).

Regarding claim 16, Spinar teaches a method for allocating bandwidth among mobile stations in a wireless network (see paragraph 0041, line 1 through paragraph

0042 line 16 and Fig. 1; where CPE's 110 are shown in a cell site and it is inherent the CPE's, users and subscribers as disclosed by Spinar are mobile stations in the wireless network as shown), the method comprising: determining that a number of mobile stations concurrently being provided communication services by the wireless network is below a predetermined threshold (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12); determining that an amount of voice or data traffic buffered at a base station for transmission to a mobile station as part of providing the communication services is above a predetermined threshold (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12); and responsively increasing an amount of bandwidth allocated to the mobile station for transmitting the voice or data traffic from the base station to the mobile station (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12).

Regarding claims 2, 10 and 17, Spinar teaches all the limitations of claims 1, 9 and 16. In addition, Spinar teaches a computer readable medium having stored therein instructions for causing a processor to execute the method of claims 1, 9 and 16 (see paragraph 0045, lines 1-16).

Regarding claims 6 and 14, Spinar teaches all the limitations of claims 1 and 9. In addition, Spinar teaches a method, wherein responsively changing the bandwidth allocation algorithm comprises: switching the bandwidth allocation algorithm to use a first bandwidth allocation algorithm to allocate the radio frequency bandwidth among mobile stations within a first group of mobile stations (see paragraph 0129, lines 1-47,

paragraph 0132, line 1 through paragraph 0142, line 9 and paragraph 0159, line 1 through paragraph 0161, line 13); and switching the bandwidth allocation algorithm to use a second bandwidth allocation algorithm to allocate the radio frequency bandwidth among mobile stations with a second group of mobile stations (see paragraph 0129, lines 1-47, paragraph 0132, line 1 through paragraph 0142, line 9 and paragraph 0159, line 1 through paragraph 0161, line 13).

Regarding claim 18, Spinar teaches all the limitations of claim 16. In addition, Spinar teaches a method, determining that the amount of voice or data traffic buffered at the base station for transmission to the mobile station as part of providing communication services is below the predetermined threshold (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12); and responsively decreasing the amount of bandwidth allocated to the mobile station for transmitting the communication traffic from the base station to the mobile station (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12).

Regarding claim 19, Spinar teaches all the limitations of claim 16. In addition, Spinar teaches a method, where the wireless network is a CDMA network (see paragraph 0043, lines 1-16), and wherein responsively increasing the amount of bandwidth allocated to the mobile station comprises increasing an amount of a forward supplemental channel allocated to the mobile station (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12).

Regarding claim 20, Spinar teaches a wireless communication system comprising: a base station, having an antenna arrangement for communicating over an air interface with a plurality of mobile stations in a given coverage area (see paragraph 0044, lines 1-20 and Fig. 1; where CPE's 110 are shown in a cell site and it is inherent the CPE's, users and subscribers as disclosed by Spinar are mobile stations in the wireless network as shown), wherein the base station dynamically allocates bandwidth to the mobile stations according to a bandwidth allocation algorithm (see paragraph 0043, lines 1-14 and paragraph 0096, lines 1-13); and program logic, stored in data storage and executable on a processor (see paragraph 0045, lines 1-16), to determine that a threshold number of mobile stations are operating concurrently in the given coverage area and to responsively change the bandwidth allocation algorithm, so as to change how the system dynamically allocates the radio frequency bandwidth (see paragraph 0018, line 1 through paragraph 0019, line 25 and paragraph 0156, line 1 through paragraph 0167, line 12).

Regarding claims 8 and 24, Spinar teaches all the limitations of claims 1 and 20. In addition, Spinar teaches a system, wherein the base station uses CDMA to communicate over with air interface with the mobile stations, and wherein the mobile stations are mobile phones (see paragraph 0043, lines 1-16, paragraph 0008, lines 1-11 and Fig. 1; where CPE's 110 are shown in a cell site and it is inherent the CPE's, users and subscribers as disclosed by Spinar are mobile phones in the wireless network as shown).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3-5, 11-13 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Spinar et al., U.S. Publication Number 2002/0080816 A1** (**hereinafter Spinar**) as applied to claims 1, 9 and 20 above..

Regarding claims 3-5, 11-13 and 21-23, Spinar teaches all the limitations of claims 1, 9 and 20. Spinar further teaches a wide range of adaptive algorithms may be constructed depending upon the particular circumstances of the communication system to support the number of members of the defined groups (see paragraph 0159, lines 1-16 and paragraph 0161, lines 1-13).

Spinar, however fails to explicitly teach switching the bandwidth allocation algorithm to a maximum-aggregate-traffic algorithm, common-data-throughput algorithm or a common-power algorithm.

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Spinar to include, switching the bandwidth allocation algorithm to a maximum-aggregate-traffic algorithm, common-data-throughput algorithm or a common-power algorithm, such that a wide range of adaptive algorithms may be utilized depending upon the particular circumstances of the

number of members of the defined groups in the communication system as taught by Spinar.

5. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Spinar et al., U.S. Publication Number 2002/0080816 A1 (hereinafter Spinar)** as applied to claims 1 and 9 above, and further in view of **Nee et al., U.S. Patent Number 6,876,857 (hereinafter Nee)**.

Regarding claims 7 and 15, Spinar teaches all the limitations of claims 1 and 9. Spinar further teaches a method, wherein determining that a threshold number of mobile stations being provided communication services are concurrently operating in the given coverage area (see paragraph 0018, line 1 through paragraph 0019, line 25, paragraph 0156, lines 1-20 and paragraph 0164, line 1 through paragraph 0167, line 12).

Spinar, however, fails to explicitly teach determining a current time of day; and using a predictive model to determine that the threshold number of mobile stations are concurrently operating in the given coverage area at the current time of day.

Nee, however, teaches a method and system of efficiently allocating bandwidth within a mobile communication network, wherein a time of day information and historic usage data of mobile devices in the communication network are used to more accurately predict the available bandwidth in contiguous cells (see col. 9, lines 9-35 and Fig. 2A). According to Nee, the current bandwidth allocation for a cell together with a predicted bandwidth usage for the time when the session would be requested from that

cell can be combined in a weighted fashion to provide a more accurate prediction of the available bandwidth at some time in the future.

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Spinar with Nee to include a method of determining a current time of day; and using a predictive model to determine that the threshold number of mobile stations are concurrently operating in the given coverage area at the current time of day, such that an estimation of a current bandwidth allocation for a cell together with a predicted bandwidth usage for the time when the session would be requested from that cell can be combined in a weighted fashion to provide a more accurate prediction of the available bandwidth at some time in the future as taught by Nee.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patel., U.S. Patent Number 6,850,764 discloses method and system for allocating bandwidth in a wireless communications network.

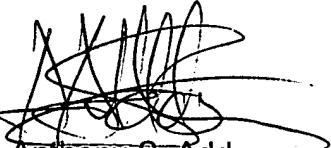
Gorsuch et al., U.S. Patent Number 6,526,281 discloses dynamic bandwidth allocation to transmit a wireless protocol across a code division multiple access (CDMA) radio link.

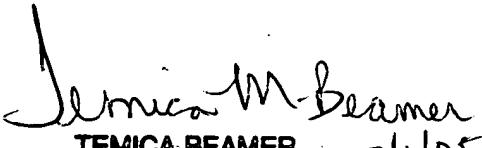
Bansal et al., U.S. Publication Number 2004/0264500 A1 discloses method and apparatus for policy-based dynamic preemptive scheduling of data transmissions.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S. Addy whose telephone number is 571-272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Anthony S. Addy  
July 08, 2005

  
TEMICA BEAMER  
PRIMARY EXAMINER

7/11/05